CLAIMS

What is claimed is:

1.   A method for call admission control for radio link addition in a fast dynamic channel allocation wireless communication system, comprising:

a pre-code allocation process;

a signal-independent code allocation process, including:

checking the availability of a code set in the new cell;

generating timeslot sequences for the available timeslots;

assigning a code set to the available timeslots in a timeslot sequence, wherein a successful assignment is a solution;

calculating the interference signal code power (ISCP) for each solution; and

selecting the solution having the lowest weighted ISCP as an optimal solution; and

a post-code allocation process.

2.   The method according to claim 1, wherein the pre-code allocation process includes:

receiving a radio link addition request message;

processing the request message; and

retrieving system information from a centralized database.

3.   The method according to claim 2, wherein the processing step includes:

reading wireless transmit/receive unit (WTRU) measurements from the request message; and

retrieving the WTRU identification, the new radio link identification, and the new cell identification from the request message.

4.   The method according to claim 2, wherein the retrieving step includes:

retrieving Node B measurements for the new cell;

obtaining the old cell identification;

reading wireless transmit/receive unit (WTRU) coded composite transport channel (CCTrCH) information and dedicated channel information;

retrieving WTRU capability information;

retrieving a list of available timeslots in the new cell;

retrieving data rates for CCTrCHs; and

retrieving a list of code sets for the requested data rate.

5.   The method according to claim 1, wherein the post-code allocation process includes:

storing allocation information in a centralized database; and

creating a radio link addition response message.

6.   The method according to claim 5, wherein the storing step includes:

recording new radio link information from the request message in the database; and

recording physical channel information in the database.

7.   The method according to claim 5, wherein the creating step includes:

adding coded composite transport channel information to the response message;

adding physical channel information to the response message;

adding dedicated channel information to the response message;

adding uplink timeslot ISCP information to the response message; and

adding power control information to the response message.

8.   A method for call admission control (CAC) for radio link addition in a fast dynamic channel allocation wireless communication system, comprising the steps of:

receiving a request message to initiate the CAC function;

processing the request message;

retrieving Node B measurements from a centralized database;

reading wireless transmit/receive unit (WTRU) coded composite transport channel (CCTrCH) information and dedicated channel information from the centralized database;

retrieving WTRU capability information from the centralized database;

retrieving a list of available timeslots in the new cell from the centralized database;

retrieving data rates for CCTrCHs from the centralized database;

retrieving a list of code sets for the requested data rate from the centralized database;

allocating the code sets to the available timeslots in the new cell;

storing the new radio link (RL) information and allocation information in the centralized database; and

creating a response message with the results of the code allocation process.

9.   The method according to claim 8, wherein the processing step includes:

retrieving the WTRU identification, the new RL identification, and the new cell identification from the request message; and

reading WTRU measurements from the request message.

10.   The method according to claim 9, wherein the WTRU measurements include the downlink timeslot interference signal code power and the downlink primary common control physical channel received signal code power.

11.   The method according to claim 8, wherein the Node B measurements include:

common measurements, including uplink interference signal code power and downlink transmitted carrier power; and

dedicated measurements, including downlink transmitted code power.

12.   The method according to claim 8, wherein the WTRU capability information includes:

uplink WTRU capability information, including:

the maximum number of timeslots per frame; and

the maximum number of uplink physical channels per timeslot; and

downlink WTRU capability information, including:

the maximum number of timeslots per frame; and

the maximum number of downlink physical channels per frame.

13.   The method according to claim 8, wherein the allocating step includes the steps of:

checking the availability of a code in the new cell;

generating timeslot sequences from the list of available timeslots; and

assigning a code set to the available timeslots in a timeslot sequence to find a solution, wherein a successful assignment is a solution.

14.   The method according to claim 13, wherein the allocating step further includes the steps of:

calculating an interference signal code power (ISCP) value for the solution; and

selecting the solution having the lowest weighted ISCP value as an optimal solution.

15.   The method according to claim 8, wherein the storing step includes:

recording new RL information from the request message;

recording physical channel information; and

updating code vector information.

16. The method according to claim 15, wherein the storing step further includes recording the new radio resource control transaction identification.

17. The method according to claim 15, wherein the RL information includes:

the RL identification;

the cell identification;

uplink code composite transport channel (CCTrCH) information; and

downlink CCTrCH information.

18. The method according to claim 17, wherein the CCTrCH information includes:

a CCTrCH identification;

a CCTrCH status;

a CCTrCH signal to interference ratio target;

a guaranteed data rate;

an allowed data rate; and

the dedicated physical channel (DPCH) information.

19. The method according to claim 18, wherein the DPCH information includes:

a list of DPCH timeslot information;

a repetition period value; and

a repetition length value.

20. The method according to claim 19, wherein the DPCH timeslot information includes:

a timeslot number;

a midamble shift and burst type;

a transport format combination indicator presence; and

code information.

21. The method according to claim 20, wherein the code information includes:

a channelized code;

a code usage status;

a dedicated physical channel identification; and

a code signal to interference target.

22. The method according to claim 15, wherein the code vector information includes:

uplink code vector information, including:

a code identification;

a code block indication; and

a code usage status; and

downlink code vector information, including:

a code identification; and

a code usage status.

23. The method according to claim 8, wherein the creating step includes:

filling both uplink (UL) and downlink CCTrCH information with physical channel information to the response message;

filling dedicated channel information to the response message;

filling UL timeslot ISCP information to the response message; and

filling power control information to the response message.

24. The method according to claim 23, wherein the CCTrCH information includes:

a CCTrCH identification; and

dedicated physical channel (DPCH) information.

25.   The method according to claim 24, wherein the DPCH information includes:

a list of timeslot information;

a repetition period value; and

a repetition length value.

26.   The method according to claim 25, wherein the timeslot information includes:

the timeslot number;

a midamble shift and burst type;

a transport format combination indicator presence; and

a list of code information.

27.   The method according to claim 26, wherein the code information includes:

a channelized code; and

a DPCH identification.

28.   The method according to claim 23, wherein the UL timeslot ISCP information includes:

a timeslot number and

a timeslot ISCP.

29.   The method according to claim 23, wherein the power control information includes:

an uplink (UL) target signal to interference ratio (SIR);

a maximum UL SIR;

a minimum UL SIR;

an initial downlink (DL) transmission power;

a maximum DL transmission power; and

a minimum DL transmission power.